

GUY  
Appl. No. 10/518,237  
January 25, 2006

**AMENDMENTS TO THE DRAWINGS**

Please substitute the attached corrected sheets 1 and 2 for the originally submitted sheets 1 and 2 of the formal drawings involving Figures 1-3.

**REMARKS/ARGUMENTS**

Claims 23-40 stand rejected in the outstanding Official Action. Claims 23-25 and 30-34 have been amended and therefore claims 23-40 remain in this application.

The Examiner's acknowledgment of Applicant's claim for foreign priority and receipt of the certified copy of the priority document is very much appreciated. Additionally, the Examiner's indication of consideration of the previously submitted prior art contained in Applicant's Information Disclosure Statement is very much appreciated.

The originally submitted abstract of the disclosure is objected to because of the English spelling of the English language word "organised." While Applicant traverses this objection and notes that the MPEP requires that applications be submitted in English and not "American," Applicant has changed the spelling in the abstract, thereby obviating any further objection thereto.

Claims 23, 24, 30, 32 and 33 are objected to due to alleged informalities. Again, each of the alleged informalities is with respect to English spelling of English words, and the MPEP is believed not to require "American" spelling of English words. However, Applicant has modified the claims so as to change the spelling to reflect idiomatic "American" English. Claims 23, 24, 30, 32 and 33 have been amended to change the spelling of the objected to words to "American" English.

Claims 23-40 stand rejected under 35 USC §102(a) as being anticipated by Hughes (while not identified, applicant presumes that the referred to "Hughes et al" reference is the "Overview of Advanced Multifunction RF Systems (AMRFS)" cited in Applicant's Information

Disclosure Statement filed December 16, 2004 and where a complete copy was submitted on June 2, 2005 in a Supplemental Information Disclosure Statement).

The present invention is an antenna system which utilizes a plurality of antenna elements. These antenna elements can be merged into a first order group of elements and various first order groups can be changed and/or merged to create second order groups of elements. As disclosed in Applicant's specification, subarrays 14 comprise a "first order group" of antenna elements 36 and groupings of subarrays 14, with the same antenna elements or different antenna elements, can be combined into one or more "second order group" identified as subarrays 18.

Applicant's independent claim 23 specifies not only a plurality of first order groups of elements, but a plurality of local networks, each network for manipulating signals received by or to be transmitted by antenna elements of at least one of the plurality of first order groups of antenna elements. The claim also recites a remote network for manipulating signals received from or to be transmitted to the plurality of local networks. Applicant has amended this portion to more clearly recite a "common remote network," as Applicant's specification in the sentence bridging pages 5 and 6 notes that the remote beam forming network 16 is "common to all functions other than ESM analysis." Therefore, Applicant has amended the language of the claim to reflect this commonality.

In addition, claim 23 requires a "controller for dynamically reconfiguring" the organization of groups from said plurality of first order groups of antenna elements into at least one second order group of antenna elements. As discussed in Applicant's specification, the combination of the claimed elements solves the prior art problems due to dedicated beam-

forming networks for each function, i.e., ESM, radar, communications and electromagnetic warfare. (Specification page 5, lines 15-23).

As noted in the background of the invention portion of the present application beginning at page 2, line 28, providing dedicated beam-forming networks for each function is not only costly, but can be difficult to implement in practice due to size constraints in the various systems. The claimed invention solves the prior art problems (caused by the need to have dedicated beam-forming networks) by providing a "common remote network" for manipulating signals as well as a "controller" for dynamically reconfiguring the organization of groups from a plurality of first order groups of antennas into at least one second order group of antennas.

In other words, the same antenna elements - by dynamically reconfiguring the groups - can be used for other purposes, i.e., radar, communication and electromagnetic warfare (as discussed in the specification at page 5, lines 23 and 24, the claimed invention utilizes a "common beam-forming network . . . for all but the ESM analysis mode"). Because dynamic reconfiguration can take place electronically, even with the scattering of aircraft antenna elements about varying locations on the aircraft (as shown in Figure 1), the antenna elements can be configured to be a phased array radar, a narrow beam or wide beam communications antenna and/or an electromagnetic warfare antenna, depending upon the desires of the operator. The benefit of this new and unique combination is to eliminate the need for duplicate equipment for every single function, as well as the required dedicated beam-forming networks.

Thus, Applicant's invention is characterized by a "common remote network" for manipulating signals to and from the antenna elements and local networks of elements and "a

controller for dynamically reconfiguring" the organization of groups from first order groups of antenna elements into second order groups of antenna elements.

The Court of Appeals for the Federal Circuit has noted in the case of *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 USPQ 481, 485 (Fed. Cir. 1984) that "[a]nticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim." So the burden is on the Examiner to establish how or where the Hughes reference contains a disclosure of each and every claimed element, in particular the claims "common remote network" and the "controller."

Hughes discloses neither a "common remote network" nor the "controller for dynamically reconfiguring" as set out in Applicant's independent claim 1. In Hughes, there is disclosed only a single tier network of antenna elements, which network is dedicated to the operations for each separate aperture of the antenna. There is no remote network which is shared, i.e., no common remote network. Should the Examiner believe otherwise, he is respectfully requested to point out where Hughes contains any common remote network.

In fact, Hughes would appear to teach away from a "common remote network" because the references to HBMRS, LBMRS, HBMTS and LBMTS in Figure 3 would appear to reference dedicated network systems to provide High Band Multifunction Receiver Systems (HBMRS), Low Band Multifunction Receiver Systems (LBMRS), High Band Multifunction Transmission Systems (HBMTS) and Low Band Multifunction Transmission Systems (LBMTS). Clearly, Hughes does not have a "common remote network" which operates in a shared capacity across a plurality of local networks. Instead, **single dedicated** networks are provided for each aspect of the antenna.

The second aspect of Applicant's independent claim 1 which is not present in the Hughes reference is the controller for dynamically reconfiguring the organization of groups. Because Hughes in Figure 3 discloses each of the networks dedicated to each specific antenna system (HBMRS, LBMRS, HBMTS, LBMTS), there is no possibility of dynamically reconfiguring the organization of antenna groups. In fact, in this regard, Hughes clearly teaches the conventional prior art noted in Applicant's specification, i.e., "a dedicated beam-forming network for each function." (Current specification, page 5, lines 23 and 24).

Should the Examiner, upon reflection, be of the opinion that Hughes contains some teaching of Applicant's claimed "common remote network" or "controller," he is respectfully requested to indicate the page and line number of such disclosure. Absent such a detailed indication, any further rejection of claims 23-40 under 35 USC §102 is respectfully traversed.

Claims 23-40 stand rejected under 35 USC §102(e) as being anticipated by Rudrapatna (U.S. Patent 6,801,790). Rudrapatna in general does disclose a controller with two groups of antenna elements, each having at least two pairs of antenna and for enabling various combinations of antenna to be selected and activated. However, Rudrapatna does not contain any disclosure of Applicant's claimed "plurality of local networks" or a "common remote network" for manipulating signals received from or to be transmitted to said plurality of local networks. Again, how or where the Examiner believes Rudrapatna discloses the "plurality of networks" or a "common remote network" is not seen and clarification is respectfully requested. Without disclosure of the subject matter claimed in claim 23, Rudrapatna simply fails to support a rejection of claims 23-40 as set out in the outstanding Official Action.

GUY  
Appl. No. 10/518,237  
January 25, 2006

Applicant has noted several minor errors in sheets 1 and 2 of Applicant's drawing figures, i.e., Figures 1-3. Applicant encloses herewith two corrected sheets of drawings, sheet 1/4 and sheet 2/4, which correct the noted errors. Entry of the corrected sheets is respectfully requested.

Having responded to all objections and rejections set forth in the outstanding Official Action, it is submitted that claims 23-40 are in condition for allowance and notice to that effect is respectfully solicited. In the event the Examiner is of the opinion that a brief telephone or personal interview will facilitate allowance of one or more of the above claims, he is respectfully requested to contact Applicant's undersigned representative.

Respectfully submitted,

**NIXON & VANDERHYTE P.C.**

By: \_\_\_\_\_

  
Stanley C. Spooner  
Reg. No. 27,393

SCS:kmm  
901 North Glebe Road, 11th Floor  
Arlington, VA 22203-1808  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100